

ABSTRACT

A thermal aircraft, such as a hot air load-carrying balloon which includes a balloon envelope having a deflation aperture therein, a spider extending across the aperture, and a venting valve or operculum designed to removably cover and seal the aperture and to be opened and/or closed rapidly so as to assist in the control of the balloon, forming both a deflation panel and a manoeuvring port for the balloon. A plurality of limiting lines is provided to extend between the venting valve and the spider or the upper part of the envelope, to suspend the venting valve below the aperture when the valve is in its deflation position. The venting valve is removably and releasably secured to the balloon envelope adjacent the periphery of the aperture, and means are provided for controllably and selectively positioning the valve in the aperture for closed, venting and deflating dispositions thereof. Controls are provided firstly to extend the valve to its maximum surface area, at which point it removably covers and seals the aperture, to allow controlled venting of hot air therefrom, and to allow reefing of the valve from the aperture for rapid deflation of the envelope. This provides the pilot with a great deal of control over the flight of the balloon, especially during final landing procedures and especially during such procedures in gusty or windy conditions, contributing significantly to control and safety.